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June 13, 2017

Single Fan Module Usable for Both Middle and Rear Side System Cooling

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Recommended Citation

Chen, Allen and Wang, Joseph, "Single Fan Module Usable for Both Middle and Rear Side System Cooling", Technical Disclosure Commons, (June 13, 2017)

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Single Fan Module Usable for Both Middle and Rear Side System Cooling

Abstract: A fan module has a "2-in-1" skin that allows the fan module to be used in different locations in a system that each have different mechanical and/or mounting arrangements.

This disclosure relates to the field of thermal management of electronic devices.

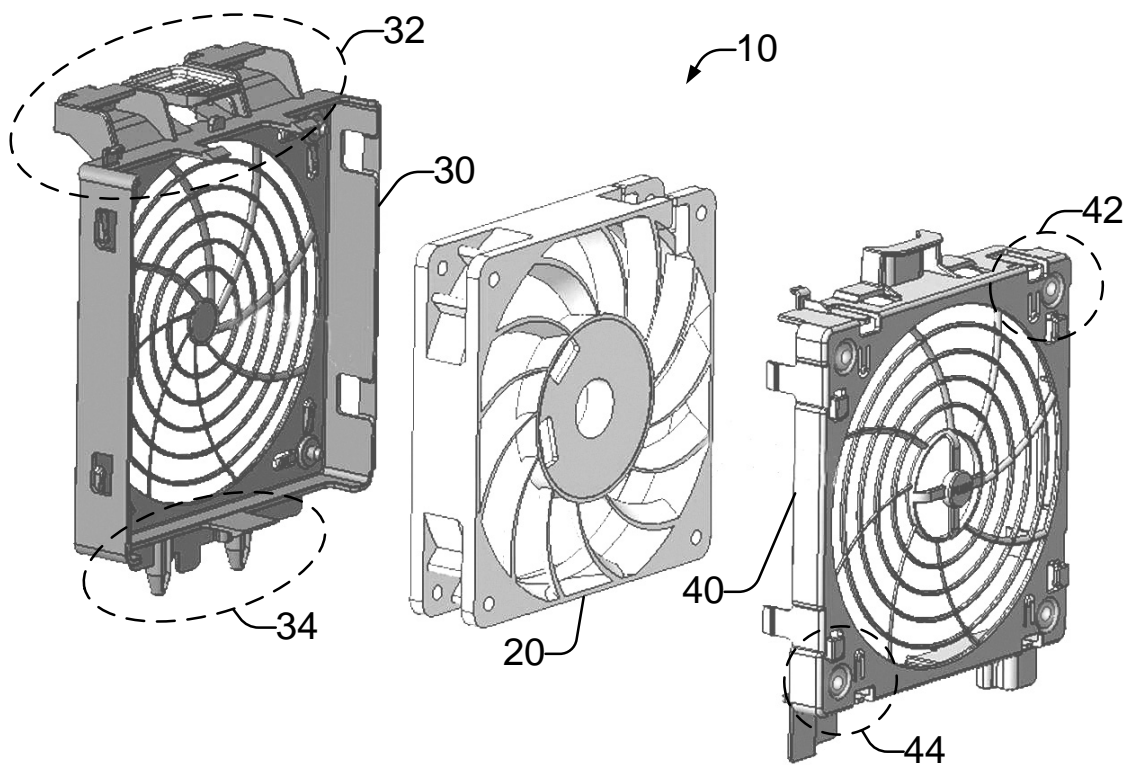
Some electronic devices use more than one fan for system cooling. Some server computers, for example, include both a middle fan and a rear fan. While the fan mechanism of both the middle and rear fans may be the same, each fan module covers the fan mechanism with a different "skin". A skin may be, for example, one or more plastic parts or housings configured for the particular mounting arrangement and other aspects of the location in the system in which the fan module is used (middle or rear). As a result, the middle fan module and the rear fan module each have a different part number. Supplies of each type of module are stocked for manufacturing and service. Customers may confuse the part numbers and order the wrong replacement fan. Supplies of one fan module may run out while there still is a sufficient supply of the other fan module.

According to the present disclosure, and as understood with reference to the Figure, a fan module 10 includes a fan mechanism 20, a first skin part 30, and a second skin part 40. The first 30 and second 40 skin parts attach to each other, one on either side of the fan mechanism 20, and enclose it. The first and second skin parts 30, 40 may each include integral fan grilles, eliminating the need for separate grille part(s).

The first and second skin pieces 30, 40 collectively include mounting features (and/or other types of mechanical features) suitable for usage of a single fan module 10 as either a middle fan or a rear fan. For example, features 32, 34 on the first skin part 30 may be used for mounting the fan module 10 as a middle fan, while features 42, 44 on the second skin part 40 may be used for mounting the module 10 as a rear fan.

While the present disclosure refers to usage of the fan module as the middle or rear fan, in other implementations the fan module can be used in other places, or in more than two different places.

The disclosed technique advantageously achieves material cost savings, and improves manufacturing and inventory flexibility, by allowing a single fan module to serve as both the middle fan and the rear fan in a system. It also improves customer satisfaction by providing a simpler fan ordering experience and eliminating incorrect fan module orders.



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